

REMARKS

Claims 1-7 are pending in this application, of which claims 6-7 are withdrawn by the Patent Office pursuant to a Restriction Requirement. By this Amendment, claims 1-2 are amended.

This Amendment should be entered after final rejection at least because it does not raise any new issues and it places this application in even better condition for allowance.

I. Provisional Claim Rejection Under The Doctrine Of Obviousness-Type Double Patenting

The Office Action provisionally rejects claims 1 and 4-5 under the doctrine of obviousness-type double patenting over claims 6, 11 and 12 of co-pending U.S. Application No. 10/827,426 to Moriyama (Moriyama '426) in view of U.S. Patent No. 6,599,582 to Kiguchi et al. (Kiguchi).

Because Moriyama '426 has not issued as a patent, this rejection has not matured. Thus, Applicant will wait until Moriyama '426 issues as a patent before considering the rejection and substantively responding.

II. Claim Rejections Under 35 U.S.C. §103(a)

The Office Action (i) rejects claims 1 and 3 under 35 U.S.C. §103(a) over U.S. Patent No. 6,599,582 to Kiguchi in view of U.S. Patent No. 5,347,713 to Shibata, U.S. Patent No. 5,683,520 to Edgett, and U.S. Patent No. 4,966,480 to Watanabe; (ii) rejects claim 2 under 35 U.S.C. §103(a) over Kiguchi in view of Shibata, Edgett, and Watanabe, and further in view of Japanese Patent Publication No. 11-001046 to Nakamura, Japanese Patent Publication No. 2000-094707 to Fujioka, and U.S. Patent No. 6,342,105 to Yano; and (iii) rejects claims 4 and 5 under 35 U.S.C. §103(a) over Kiguchi in view of Shibata, Edgett, and Watanabe, and further in view of U.S. Patent Publication No. 2003/0030689 to Hashimoto. Applicant respectfully traverses the rejections.

The claimed subject matter is directed to a pattern formation method for forming a film pattern by disposing liquid droplets of a functional solution on a substrate, including steps for filling a passage with purified water, filling the passage with a solvent, filling the passage with the solvent contained in the functional solution, filling the passage with functional solution, and depositing the functional solution on the substrate. By this Amendment, claims 1-2 are amended to recite that the recited steps are performed in the recited order and to explicitly recite a step of filling the passage with the functional solution.

Kiguchi discloses a pattern forming method involving the deposition of liquid droplets on a substrate using an ink jet print head 2, the formation of banks 706 (Fig. 10) on the substrate 1, and disposing fluid droplets 11 into grooves between the banks 706, where the fluid droplets 11 are identified as fluid 12 (Fig. 10).

Shibata discloses a method for cleaning ink jet heads of swarf by washing with pure water infused with carbon dioxide bubbles or an organic solvent (col. 2, lines 1-12). In the first embodiment, pure water including carbon dioxide bubbles is injected from nozzles 33 into ink supply ports 5 during the manufacturing process (col. 6, lines 36-42).

Edgett discloses a method for cleaning ink storage materials such as felt or foam (abstract) by heated and softened water to which isopropanol has been added (abstract) to remove contaminants present as a result of the manufacturing process (abstract).

Watanabe discloses a washing liquid cartridge 10 for cleaning refill ink type writing instruments that contains a solvent that is the same as the solvent used in the ink if the ink contains a solvent (col. 4, line 67 to col. 5, line 2).

Regarding independent claim 1, the Office Action's rejection is not clear, but appears to allege that Kiguchi's disclosure corresponds to the steps of forming banks and disposing liquid droplets; Watanabe's disclosure corresponds to the step of filling a passage with a solvent able to dissolve a solvent in the functional solution; and that Shibata's and Edgett's

disclosures correspond to the remaining filling steps. Although the Office Action asserts that some of the separate filling steps can be met by one disclosed filling action (see Response to Arguments section, fourth paragraph: "the Applicant should note that the claim is not limited to filling the passage with purified water and a solvent at different times"), this reasoning no longer applies because the claims now recite that the method steps are performed in the order recited. Regarding independent claim 2, the same arguments apply and additionally, the Office Action further asserts that Nakamura, Fujioka, and Yano disclose the use of a storage fluid and the subsequent cleaning of the storage fluid.

The Office Action fails to allege that one of ordinary skill in the art would have combined the disclosures of the applied references to perform the steps in the order recited in claims 1-2. Thus, it is believed that the claims are patentable over the applied references.

Further, Shibata, Edgett, and Watanabe are all directed to methods of cleaning ink print heads or other devices with solvents. The Office Action admits this point (see the Office Action, section 4 at pages 3 and 4 where the applied references are described as disclosing methods of cleaning or washing). It would not have been obvious to one of ordinary skill at the time of the invention to modify the disclosure of Kiguchi by adding the cleaning steps from three separate references. Because, at any given time, an ink jet head will be normally be contaminated by one contaminant (e.g., swarf for ink jet heads just manufactured, or dried ink otherwise), there is only need for one type of solvent and cleaning process to be used. Because of this, one of ordinary skill would not have been motivated to modify the disclosure of Kiguchi with more than one cleaning step. Thus, the Office Action's allegation that it would have been obvious to add the cleaning steps from all three of Shibata, Edgett, and Watanabe to the disclosure of Kiguchi is an improper use of Applicant's own disclosure in impermissible hindsight.

For the foregoing reasons, Applicant respectfully requests withdrawal of the rejections.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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